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© KURT LUBINSKI

A GOLD COAST GIRL PROUDLY WEARS A COTTON PRINT FROM A FARAWAY ENGLISH MILL

Royal portraits adorn this cherished relic of George V's silver jubilee. Cocoa for cotton is a link between the Gold Coast Colony (Bulletin No. 1) and the British Isles. In the first postwar year the Gold Coast imported 37,000,000 square yards of cotton goods and exported 236,000 tons of cocoa.

Bulletin No. 1, April 17, 1950

Africa's Gold Coast Exports More than Gold

IN SPITE of the name of Britain's rectangular colony under the western bulge of Africa, not all that glitters is gold along the Gold Coast.

True, the British-governed West Africa country stands in sixth place among the gold-producing lands of the world. Its annual output of the yellow metal is more than half a million ounces. The ore at Obuasi, 100 miles inland from Takoradi (the Gold Coast's only deep-water port), assays very high—an ounce of gold to a ton.

Gold Panners Find Diamonds

In 1919, however, panners of river gold discovered diamonds. A recently discovered diamond field midway between Takoradi and Obuasi, described as "phenomenal," is expected to increase the export volume of the Gold Coast diamonds. Gem stones have been rare but production of small industrial diamonds has topped 1,000,000 carats in some years.

Greatest glitter of all the Gold Coast's resources is its cacao crop. Acres of cocoa-producing pods ripen to a canary-yellow brilliance under the gleaming tropical sun. Like diamonds, they are a comparatively recent Gold Coast harvest.

Imported from tropical America 70 years ago, the cacao tree took readily to the new soil and humid climate. The beans, which yield cocoa and chocolate, are the Gold Coast's leading export. Normally they are worth twice its output of gold. The colony is the world's chief chocolate and cocoa source.

In the 15th century Portuguese seafarers sailed down from the north and established a few small trading posts. In 1553 British ships returned to home ports with gold from the African land and ships of nearly every nation in Europe joined the procession to the treasure ports. They bartered European goods for native gold, and the Gold Coast on the Gulf of Guinea shore was named. Today, belying the second half of its name, the colony slices north 440 miles into the West African bulge (map, next page) —a distance one-third greater than its shore line.

Majority of Natives Live in Tribal Lands

The Gold Coast somewhat resembles the state of Minnesota in both size and shape. Fronting the gulf is the Gold Coast Colony proper. There live half the area's 4,000,000 inhabitants (illustration, cover). Inland and northward lie Ashanti and the larger, heavily forested Northern Territories. Part of Togoland to the east is administered from Accra, the Gold Coast capital, under United Nations trusteeship to Great Britain.

Native Negroes outnumber non-Africans more than 600 to one. The majority remain in their tribal lands. They live in mud-hut villages, sleep on grass mats, and eat little meat. On the coast and in the Ashanti country they work on cocoa plantations. On higher land of the north they raise cattle and sheep. The few who are educated include doctors, law-

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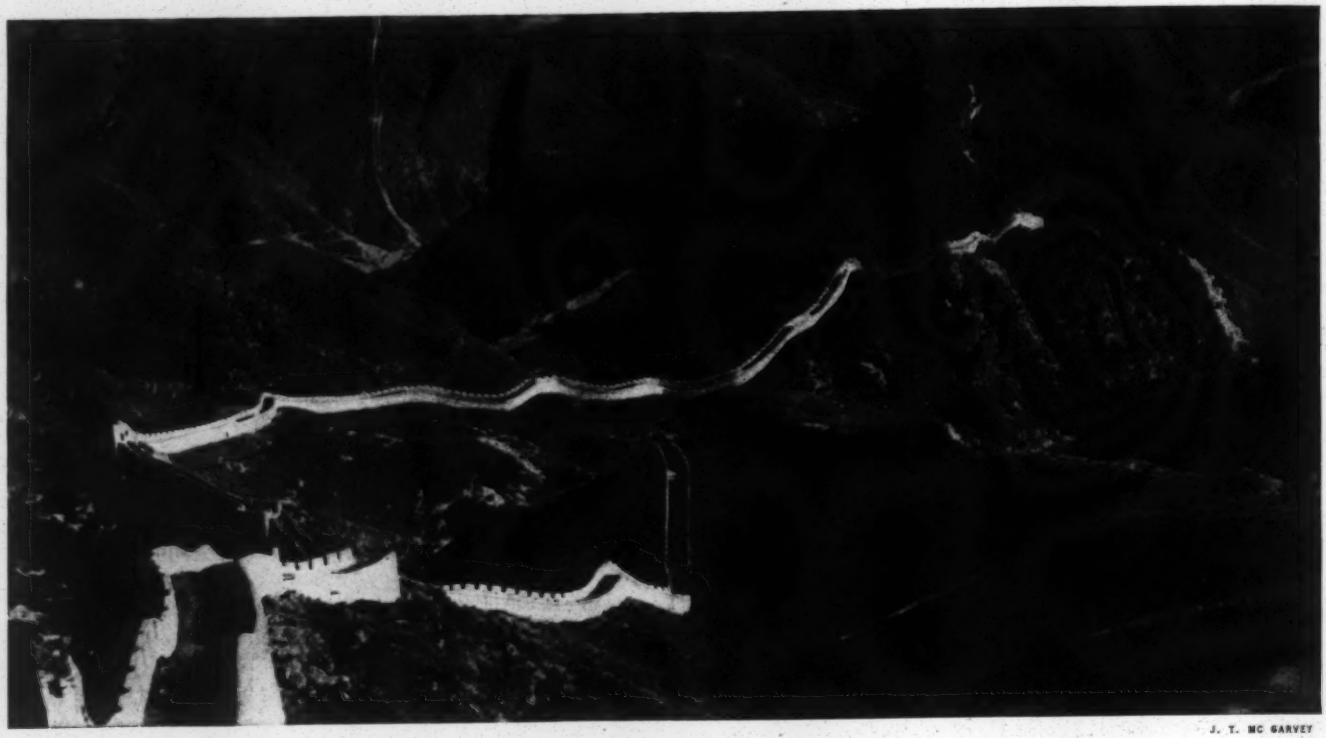

J. T. MC GARVEY

THE RUGGED MOUNTAINS SURROUNDING NANKOW PASS, FORTIFIED BY THE GREAT WALL, SEPARATE CHINA FROM MONGOLIA

Climbing steep grades and following sharp ridges of north China, the Great Wall (Bulletin No. 3) is a marvel of engineering skill and durability. It is often called "the eighth wonder of the world." It has outlasted all seven of the traditional wonders except Egypt's pyramids. Built chiefly of brick and stone filled in with earth, it averages over 20 feet in height. The roadway along its top is about 13 feet wide. The wall is the world's longest fortification. In sections open to attack, towers rise every 300 feet. The area above was familiar to prewar travelers along Nankow Pass's caravan routes and railroad.

Bulletin No. 2, April 17, 1950

Maryland Plans Survey of Mason-Dixon Line

THE Mason-Dixon Line, one of the most famous of world boundaries, is also one of the least understood. Lawmakers of the State of Maryland, whose northern boundary the line forms, are even afraid the exact position of the border is vague. Through the years markers have been lost, defaced, and moved. So the recent session of the Maryland General Assembly provided for a tentative resurvey.

So firm is the Mason-Dixon Line in the public mind as the division between North and South, that it is erroneously believed by many to have originated around the Civil War period. Its significance is presumed to have carried over from the time when it separated slave and free states, or marked limits of secession.

Union States Were South of Line

Actually, this line was first surveyed during colonial days. Forming what is now the southern Pennsylvania-northern Maryland border, it was established to settle disputes over the extent of the adjacent Penn and Calvert land grants from the British Crown.

Later, the Mason-Dixon boundary did mark part of the dividing line between slave and free territory. But it lost such North-versus-South meaning during the Civil War when the slave-holding states of Maryland and Delaware, both south of the line, did not secede but remained on the Union side.

It was in 1763 that the two British surveyors and astronomical computers, Charles Mason and Jeremiah Dixon, were called to the American colonies to follow on the ground certain agreements reached by the Penn and Calvert families after decades of controversy, negotiation, lawsuits, and open warfare.

The project grew out of the final legal decision, in 1750, which called for the setting of specific boundaries between Maryland and Pennsylvania. An important side issue also was the boundary between Maryland and the area of Delaware, then part of Pennsylvania.

Halted by Indians

Local surveyors had already roughly marked the Maryland-Delaware border when Mason and Dixon arrived. After checking the work of their predecessors, the British team moved on to run the east-to-west line. They started from a designated point, now the northeast corner of Maryland, which was set with respect to the settlements of Philadelphia and New Castle.

Mason and Dixon pushed through wild and beautiful country that is now fertile farmland (illustration, next page). They surveyed some 230 miles before they were halted, in 1767, by hostile Indians deep in the Allegheny Mountains. The original markers, made in England, were of oölite limestone. Inscribed with the arms of Penn and Calvert on opposite sides, they were set at about five-mile intervals. Simpler stones in between bore the letters P and M.

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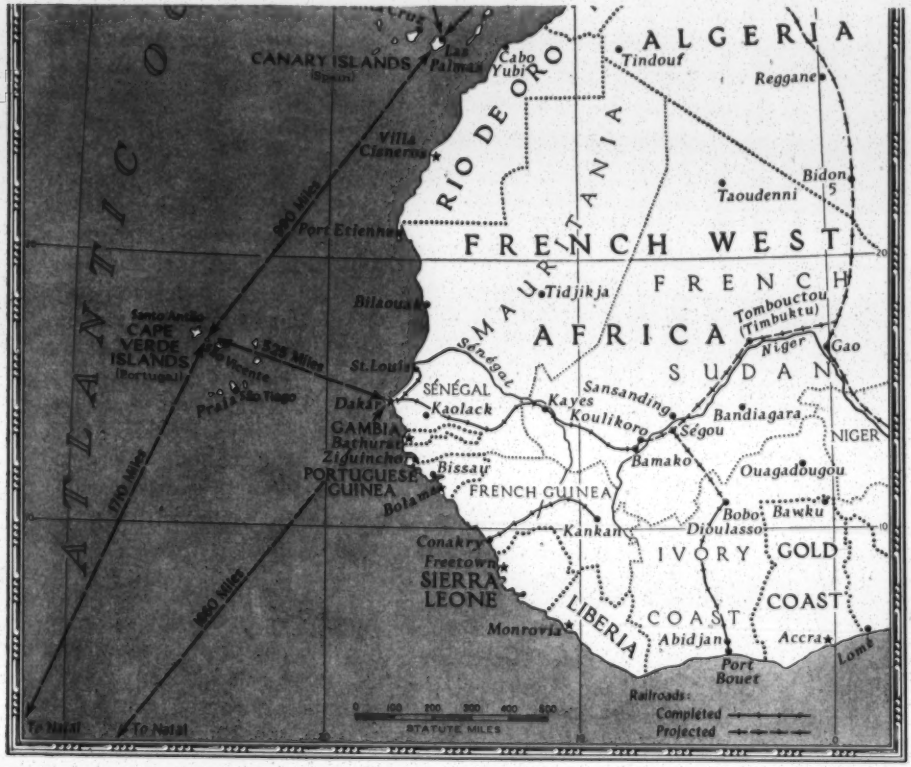
yers, and teachers. Some residents are eager to have complete and immediate self-rule.

Aluminum ore and manganese are now important mineral exports. Mahogany and other hardwoods are cut for world trade. Kola nuts, palm kernels, copra, and rubber follow cocoa on the list of agricultural exports. Rubber was the Gold Coast's money crop early in the century before East Indian rubber forged ahead.

The 900-mile Volta River system drains most of the country. About 2,800 miles of roads are passable for automobiles. Some 365 miles of railway run northward from Takoradi and Sekondi to Kumasi, the Ashanti capital, then southeastward to Accra.

World War II brought a boom to Accra. It became a station on major air routes to Eastern battle fronts. Even without good harbor facilities, its population tripled in the 1940's to a present total of about 135,000. Kumasi, ranking second, counts half as many. The current estimate for Takoradi-Sekondi is 44,000.

NOTE: The Gold Coast is shown on the National Geographic Society's map of Africa. Write the Society's headquarters, Washington 6, D. C., for a price list of maps.



H. E. EASTWOOD

BRITAIN'S GOLD COAST COLONY SHARES AFRICA'S BULGE WITH SPANISH, FRENCH, AND PORTUGUESE TERRITORIES, AND THE INDEPENDENT REPUBLIC OF LIBERIA

Though gold figures in the name of Spain's Rio de Oro (river of gold) as it does in Britain's Gold Coast, none of the metal is found in the Spanish area, whose chief export is fish; and gold is far outranked by cocoa in the English colony.

China's Great Wall Being Quarried for Stone

THE Great Wall of China, built two centuries before Christ, probably has no equal among the world's construction jobs for the amount of human labor bestowed upon it. Communists are now reported adding to the sum total of that labor by dismantling parts of the immense barrier to obtain stone and brick for the new building in north China's cities.

Some 300,000 troops were impressed for the ancient project as conceived by the dynamic emperor, Chin Shih Huang Ti. In addition, all available prisoners of war and criminals, "including many dishonest officials," history shows, were drafted for the task. Construction took 15 years, from 219 to 204 B.C.

2,000-Mile Wall

Even that was not the beginning or the end of labor on the "long rampart." Parts of Emperor Chin's wall were built on sections dating from three centuries earlier. Some four centuries after Chin, the Han dynasty extended the operation farther into central China. By the 6th century A.D., the wall had fallen to ruin in places. Large sections were then rebuilt and new spurs were added.

Again, centuries later, Ming emperors (1368 to 1644) strengthened the wall from its eastern terminus at Linyu (Shanhaikwan) on Liaotung Bay of the Yellow Sea along much of its 2,000-mile tortuous reach westward almost to Sinkiang.

Ming policy concentrated, however, on construction in the east. The Great Wall was divided into two distinct sections at the Yellow River west of Ningwu. East of the river the wall was made into a great defense rampart which is still a magnificent monument. Much of it is as high as a house and as wide as a roadway, with a parapet on top and tower forts at frequent intervals.

By cutting off the herdsmen of the north from the soil tillers of the south, the eastern 1,000-mile stretch divided civilizations. West of the Yellow River the barrier served as protection for trade caravans traveling the road between China and the West. This part, built largely of tamped earth, is now reduced to low mounds and heaps of rubble.

Philadelphia to Topeka

Imagine the eastern end of China's Great Wall transplanted to Philadelphia, which is in the same latitude. The rampart would then climb the hills and ridges westward to 75 miles east of Pittsburgh. There sections would diverge, but meet again near Columbus, Ohio. Southeastward the structure would continue past Cincinnati and Louisville almost to Little Rock, Arkansas. From there it would loop northwestward past Kansas City, ending its contortions 100 miles west of Topeka, Kansas.

The Great Wall's nearest approach to Peiping (Peking) is about 30 miles to the northwest. There the famous Ming tombs lie close inside the most fortified section of the rampart, where historic Nankow Pass (illustration, inside cover) is a bottleneck of China-Mongolia traffic.

Emperor Chin, the Great Wall builder, founded the short-lived dynasty

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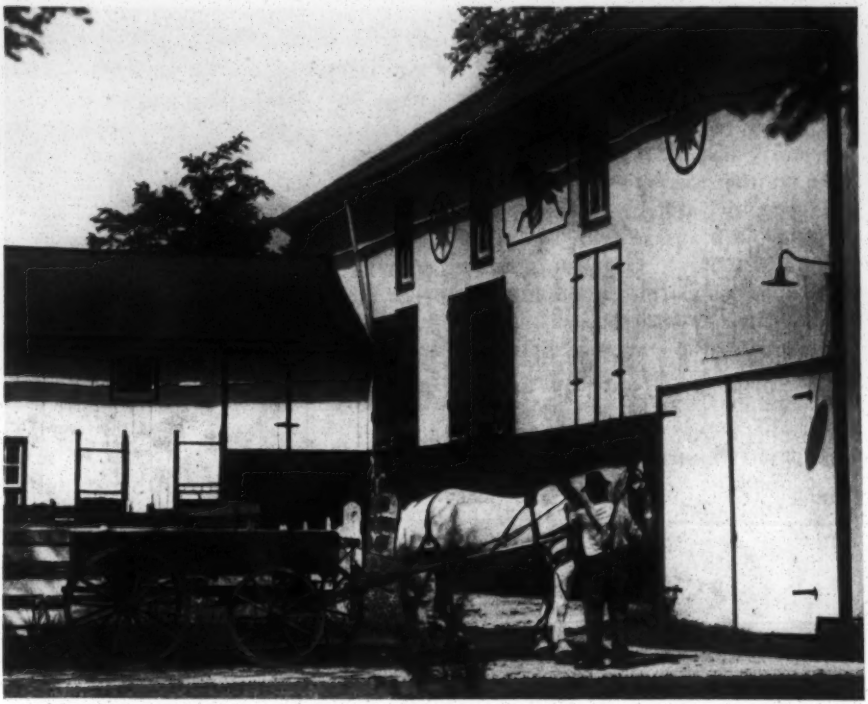
The job was astonishingly accurate, especially in view of the difficulties presented by crude instruments, wilderness terrain, and unfriendly Indians. The latitude of the Mason-Dixon Line, which its surveyors had computed as 39° 43′ 17.6″, was found eventually to be 39° 43′ 19.91″—a difference of only 180 feet.

But arguments over the boundary were still not over. At the eastern end of the line, a small triangle of territory, disputed between Pennsylvania and Delaware, became a kind of no man's land of confused jurisdiction over taxes and other matters.

A resurvey, completed in 1850, resulted in the award of this tract of about 840 acres to Pennsylvania. Continuing controversy led to a second resurvey, and the eventual reversion of the triangle to Delaware.

NOTE: The area traversed by the Mason-Dixon Line is shown on the Society's map of the Northeastern United States.

For further information, see "Down the Potomac by Canoe," in the *National Geographic Magazine* for August, 1948; "Artists Look at Pennsylvania," July, 1948; "In the Pennsylvania Dutch Country," July, 1941; "Maryland Presents—" April, 1941*; "Diamond Delaware, Colonial Still," September, 1935; and "Penn's Land of Modern Miracles," July, 1935. *(Issues marked by an asterisk are included in a special list of Magazines available to teachers in packets of ten for $1.00; issues unmarked are available at 50¢ a copy.)*



J. BAYLOR ROBERTS

DECORATED BARNS ARE A TRADEMARK OF THE RICH FARMLANDS ALONG THE MASON-DIXON LINE

Originally painted on as hexes against evil spirits, the symbols are now pure decoration. The "Pennsylvania Dutch" keep neat farms and have made their region one of the richest agricultural areas in the east.

Blight Hits Oaks, Valued for Timber, Beauty

MIGHTY oaks from little acorns grow, but a spore that is so small it cannot be seen with the naked eye is causing many of the great trees to wither and die. Botanists fear that the killing fungus spreading among the nation's oaks may be as devastating as the chestnut blight of a generation ago.

The oak fungus, first isolated and identified six years ago, is made up of tiny spores which block the water channels in a tree, eventually killing it. Apparently carried by the wind, the spores have moved the disease steadily eastward from its central midwest birthplace. The blight, called *Chalara guercina*, has reached as far east and south as Indiana and Kentucky.

White Oaks Most Valuable

Stateliness characterizes mature specimens of some 200 types of oak distributed widely in the Northern Hemisphere, chiefly in the temperate zone. Of the 50 or more species native to the United States, more than half have value as timber. These earn for the oak family first rank among hardwoods in lumber production.

The family's reputation as commercial timber—strong, hard, tough, and beautifully grained—is due largely to the white oak (*Quercus alba*). Its range is the entire eastern half of the country, from which is taken virtually all the timber oak.

White oaks were originally dominant in many of America's eastern forests primeval. Their dominance was achieved by virtue of longevity and despite slow growth. The land-clearing process brought a gradual shift to faster-growing species of the tree which still provide most of the cover in vast forest areas.

White oaks more than 100 feet high—saplings in Columbus's day—were not uncommon a few decades ago. Most such venerable American giants today have local and even national renown as landmarks.

Oak Made British Great

Oak has countless uses as building lumber. It provides ties for the nation's railroads, timbers for mine construction, and staves and heads for barrels.

Oaks may have existed 100 million years ago, geologists believe. Abraham, the Bible says, rested under an oak. Britain's greatness was in large measure due to exploring fleets and fighting armadas fashioned from the British oak.

An oak near Rouen, France, estimated to be 1,200 years old, contains two small chapels at separate levels in its hollow interior. Tree doctors have worked hard to preserve a gnarled oak of mysterious species near Sebring, Florida, that may predate Ponce de León by centuries.

Connecticut's Charter Oak at Hartford blew down in 1856. It is said to have hidden the colony charter granted by Charles II in 1662 when its surrender was demanded in 1687. In Athens, Georgia, the "Oak that

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(249 to 207 B.C.) that probably gave China its name. He united the country by subjugating a group of warring states. He then made himself China's "first emperor" by the simple expedient of burning the records of his predecessors and burying alive 500 scholars of history, thus sweeping away the past.

Chin's use of mass hand labor to perform the miracle of Great Wall building has had its modern counterparts during World War II. Sheer numbers of workmen made possible the Stilwell (Ledo, Burma) Road and enormous airfields used as B-29 bases for bombing Japan.

NOTE: The Great Wall may be traced on the Society's map of China.

For further information, see "Power Comes Back to Peiping," in the *National Geographic Magazine* for September, 1949; "Along the Yangtze, Main Street of China," March, 1948; "China Fights Erosion with U.S. Aid," June, 1945; "Exploring a Grass Wonderland of Wild West China," June, 1944*; "Burma Road, Back Door to China," November, 1940; "Four Thousand Hours Over China," May, 1938*; "China's Great Wall of Sculpture," March, 1938*; "Peacetime Plant Hunting About Peiping," October, 1937*; and "The Great Wall of China," February, 1923.

R. E. BABER

TRAVELERS ALONG THE GREAT WALL FIND SIMPLE FOOD AND ROUGH SHELTER IN A RAMBLING INN

The tile roof ripples in the shadow of the wall. Time and erosion have softened the once grim outlines of the massive barrier. Here and there grass grows in the wide roadway that surmounts it. Many miles of its far-inland portions have crumbled to dust.

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Danish Viborg Approaches 1,000-Year Jubilee

THE pleasant Danish city of Viborg, now getting ready for a July, 1950, jubilee to commemorate its 1,000 years of existence, is one of the oldest and most historic sites in Denmark.

Settled before the Danes were Christianized, Viborg became a busy market center during late medieval and Renaissance times. As a war prize in the early struggles for power in the area, it was often burned and pillaged.

Frescoes Attract Visitors

In Viborg, the old Danish kings were elected by the dominant nobles of the *rigsmode*, or national assembly. It was frequently favored as the site of the royal residence. The crypt of Viborg's famous cathedral contains the tombs of several rulers, including that of King Eric Glipping. Like King John of England, Denmark's King Eric was forced to grant his rebellious nobles, in 1282, a charter that curtailed the ancient royal rights.

Viborg's cathedral, Denmark's largest church, was originally built between 1130 and 1169. Restored and rebuilt during the 1860's and '70's, it is particularly interesting to travelers for its huge and colorful frescoes, which took a dozen years to complete. They illustrate Old and New Testament stories. The work was done around the turn of the 20th century by the well-known artist, Joachim Skovgaard, with four assistants.

The church itself is of Romanesque architecture. Made of granite, unusual in Denmark, it raises twin towers in an imposing symbol of the past that dominates this city of modest new and old structures.

Viborg lies in the heart of the mainland peninsula of Jutland, the biggest land spread in this country of more than 500 islands. It has a handsome scenic setting. Beside the shores of a double lake, it is surrounded by rolling hills, heather-fragrant moors, and the remains of ancient oak forests as well as reforested strips stretching green fingers toward the horizon.

Near Old Manor Houses

The surrounding area produces many of Denmark's eggs. Near-by Skive has the country's most modern egg-packing plant (illustration, next page). The eggs are mostly exported to England. Before the war Denmark's hens produced enough in a year to provide one egg for every person on earth.

In the countryside around Viborg are many old manor houses, and the ruins of an occasional feudal stronghold, such as Hald Castle, with its round tower of historic associations.

Today's Viborg, despite its brilliant past and convenient central location, is a quiet, unambitious town. Like other provincial capitals in this nation of few big cities, it is relatively small—with a population of little more than 20,000. Some industry is provided by an iron foundry, distilleries, and cloth-making factories.

Another historic city to the east of Viborg is the somewhat larger Randers. There a statue in the town square to Niels Ebbesen (a medieval hero who killed the German tyrant, Count Gerhard) served as an example

Owned Itself" became so known after 1820. In that year William H. Jackson recorded a deed giving the tree self-ownership and willing it the surrounding plot. He did this "in consideration of the great love" he bore the tree and his "great desire" to protect it "for all time."

Because of the majestic Wye Oak at Wye Mills on Maryland's "eastern shore," Maryland chose the white oak as its state tree. The 400-year-old specimen is 89 feet high and far-spreading. Georgia, Illinois, West Virginia, and Connecticut have named oak species as state trees.

NOTE: For additional information on trees and forests of the United States, see "Forest Lookout," in the *National Geographic Magazine* for July, 1946; and "California's Coastal Redwood Realm," February, 1939*.

See also, in the GEOGRAPHIC SCHOOL BULLETINS, March 7, 1949, "New York's Red Oak May Join State Tree List."

J. BAYLOR ROBERTS

GIRLS OF GULF PARK COLLEGE, GULFPORT, MISSISSIPPI, HOLD POETRY CLASS IN FRIENDSHIP OAK

In tribute to this tree patriarch, an admirer wrote, "I was a sapling when Columbus sailed into the Caribbean, and had begun to bear acorns when Ponce de León reached Florida. I saw many a pirate ship on this coast, when they put in for water and supplies. Lafitte and Blackbeard dropped anchor hereabouts during my time. When Captain Kidd was hanged in London in 1701 for his American buccaneering, I had been right [here] for more than 200 years. How time flies!"

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to the Danish underground in its struggle against the oppression of German occupation forces during World War II.

NOTE: Viborg may be located on the Society's map of Europe and the Near East.

For additional information, see "2,000 Miles Through Europe's Oldest Kingdom," in the February, 1949, issue of the *National Geographic Magazine;* "Bornholm—Denmark in a Nutshell," February, 1945*; "On Danish By-Lanes," January, 1940; "Royal Copenhagen, Capital of a Farming Kingdom" and "Denmark, Land of Farms and Fisheries" (14 color photographs), February, 1932.

See also, in the GEOGRAPHIC SCHOOL BULLETINS, March 20, 1950, "Denmark to Honor Weaver of Fairy Tales."

MAYNARD OWEN WILLIAMS

THIS MACHINE AT SKIVE, DENMARK, WEIGHS AND SORTS MILLIONS OF EGGS A MONTH

Eggs of the same size are automatically graded and placed together. Then the girls crate them in cardboard containers. Huge cold-storage vaults hold the eggs until they can be shipped. Most of them go to Great Britain.

Geographic Oddities and Briefs

The highest post office in the United States is at Trail Ridge, Larimer County, Colorado. It is 11,797 feet above sea level.

The sands of the desert, used sometimes as a symbol of perpetual warmth, grow extremely cold at night. A daytime temperature of 100 degrees Fahrenheit in the Sahara may drop that same night below freezing.

About half of the earth's known uranium ore lies in the Shinkolobwe mine, 70 miles northwest of Elisabethville, Belgian Congo. Discovered in 1915, this fabulous deposit is so well known to scientists that secrecy regarding its location is no longer attempted.

Vermont was the first state to provide for full manhood suffrage which was not dependent on property, owned or rented, or a specified income.